applied to the ear. The external auditory canal and the membrana tympani are often scalded by the instillation of various alcoholic and ethereal fluids for the cure of toothache.

OPHTHALMOLOGY.

UNDER THE CHARGE OF

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The Educative Treatment of Convergent Squint.—PRIESTLEY SMITH (Birmingham, England) prefers the term "educative" to "orthoptic" as better indicating the essential idea of this kind of treatment; and he regards it as having parallel importance with the optical and the operative treatment of strabismus. From his study of it he concludes:

Convergent strabisumus is a disorder of innervation in which the visual centres fail to control the act of convergence. This act is thereby degraded. It becomes purely automatic and purposeless. It is excited by the associated act of accommodation. It is excessive because it is uncontrolled.

The failure of control depends largely on faulty development of the visual apparatus. The fault, whether it be in the eye or in the central organs, is frequently hereditary. In many cases the power of control is lost through shock or illness during infancy.

Hyperopia, when of considerable degree, predisposes to strabismus, and sometimes causes it by demanding an abnormal effort of control. Hyperopia of low degree does not account for strabismus in a child.

The disorder is confirmed and perpetuated by suppression of the function of the squinting eye. In treating it we should aim at stopping this habit of suppression and establishing the habit of binocular control.

The means employed in the educative treatment include: 1. The occlusion of one eye by a shade or pad. Usually it is the "good" eye which is occluded to compel the use of the squinting eye, to promote its true fixation, and to improve its visual acuteness. But if it becomes necessary at times to use the "good" eye, the shade should be transferred to the other. For the squinting eye had better be in darkness than continue to form images which the brain does not perceive.

2. Bar-reading—that is, reading with a ruler or something of the kind held between the page and the face, so that a part of each line is hidden from either eye alone, and the two eyes must be used to read the whole of it. This helps the recovery of binocular vision by making the patient conscious

each instant of the deviation, and by compelling the movements necessary to fix with the squinting eye. It is not applicable to very young children.

3. The use of "fusion-tubes" is useful for children who cannot read. These are two tubes each of which has a convex lens in the end held toward the eye, and a shutter with a small hole covered with ground-glass in the other. The distance from the lens to the shutter is the focal distance of the lens. The tubes are connected by chains, so that they can be turned in the direction of the two visual axes in any case of squint. The exercise with them consists in making the two holes appear as one, and in keeping them fused as the direction of the tubes is slowly changed. This cultivates the faculty of binocular fusion.—*Ophthalmic Review*, June, 1898.

[The occlusion of one eye should be confined to cases in which the squint is constant. Interruption of binocular vision may convert an intermittent strabismus or even a heterophoria into an actual or constant deviation.—ED.]

Operative Treatment of Lesions of the Frontal Sinus.—S. S. GOLOVINE (Moscow) holds that when operative treatment is necessary it ought to embrace two conditions, viz., that the cure should be complete and that the patient should not be disfigured by the operation. Curettement through an opening made with a trephine is never satisfactory, because one is not sure that the curettement is complete. Golovine has, in three cases, made an osteoplastic opening into the sinus. A T-shaped incision is made at the inner extremity of the brow through the soft parts. Then a bone flap of the required size is made, convex upward, and with its base corresponding to the inner third of the orbital ridge. Through this the sinus may be thoroughly cleaned out. A drain is put through into the nose, and the bone shutter turned back into place. The drain is to be kept in two months; and at first the wound is washed daily, using hydrogen dioxide.

In three cases he has resorted to cauterizing the interior of the sinus with steam. This may be done through a fistula or through a small trephine opening at the upper inner angle of the orbit. The injection must be of live steam, not of condensed, hot, watery vapor. It should be continued from one-quarter to one-half minute, and may be repeated after several minutes. This is followed by suppuration and slow granulation within the cavity, five or six months being required for its complete obliteration. The post-operative treatment is daily irrigation with hydrogen dioxide. By experiments on dogs it was demonstrated that this treatment was followed by the complete filling of the cavity by bony tissue, which at the end of a year resembled slightly hardened diploë.—*Archives of Ophthalmology*, vol. xxvii., No. 3.

Sympathetic Ophthalmia.—GEO. FERDINANDS (Aberdeen) reports two cases of ophthalmitis occurring long after the enucleation of the fellow eye for injury. In the first case the injured eye was removed, probably several weeks after the injury, the other eye having become "weak." Fourteen years later the patient had the socket operated on, and commenced wearing an artificial eye, but only occasionally. Three years later she was in poor health, and returned with iritis and keratitis punctata. Later she had several relapses, controlled by atropine. She retained vision = 6/XVIII.

The second case was one in which the injured eye was enucleated four days after injury. Twenty-one years later the patient found the artificial eye gave him pain in the brow, and noticed impaired vision and signs of inflammation in his good eye. When seen several months after this there was well-marked iridocyclitis, the eye was very sensitive to touch, and there was severe neuralgic pain in the brow and temple. Subsequently there were relapses and ulceration of the cornea. Vision was reduced to counting fingers at four feet. The fundus could not be seen.—*British Medical Journal,* June 18, 1898.

CECIL E. SHAW (Belfast), from a study of sympathetic ophthalmia, made under the auspices of the Scientific Grants Committee of the British Medical Association, concludes that since the publication of this theory practically the whole weight of the experimental evidence and the greater portion of the clinical evidence fails to support the migratory theory (migration of germs along the optic nerves) or is actually opposed to it; that it can only stand on the assumption that the migratory germs can neither be inoculated, cultivated, nor stained by any known method. We are obliged to fall back on some form of the old theory, that sympathetic ophthalmia is due, partially if not entirely, to irritation of the ciliary nerves.—*British Medical Journal,* June 18, 1898.

[Ferdinands says that in his cases the symptoms and progress were identical with those of sympathetic ophthalmitis. But these are only the symptoms and progress of a bad irido-cyclitis from other causes. Sympathetic ophthalmitis is not certainly anything more than an irido-cyclitis following injury and similar inflammation of the other eye when this is not enucleated. The connection of the irido-cyclitis with the loss of the other eye by injury in these cases is, therefore, extremely doubtful. Of course, if the essential morbid factor of sympathetic ophthalmitis is a nerve irritation, it is possible that this may be transmitted from other than the ciliary nerves.—ED.]

Anæsthetic and Germicidal Actions of Holocain—R. L. RANDOLPH (Baltimore), from a use of the drug (in a 1 per cent. solution) in fifty-four cases, concludes that it is an effective local anæsthetic. Applied as is cocaine for cataract extractions and iridectomy no difference was observed in the anæsthesia produced by the two drugs. For foreign bodies on the cornea, pterygium, etc., the quickness with which anæsthesia was produced (less than two minutes) was striking. The absence of desiccation of the cornea, dilatation of the pupil, and slight subsequent photophobia render holocain useful for the removal of foreign bodies from the cornea.

From bacteriological experiments Randolph concludes: In solution of the above strength holocain possesses distinct germicidal properties. Exposed to it, pus organisms lose their vitality within twenty-four hours. Exposures of from five to thirty-five minutes showed in every instance a gradually diminishing number of colonies, showing that in those exposures many of the organisms were killed.—*Bulletin of the Johns Hopkins Hospital,* July, 1898.

[The bactericidal power of holocain gives it the advantage that solutions of it will keep themselves sterile without the addition of another germicide. We have no perfectly reliable germicide that can be added to cocain solutions without serious disadvantage, and we must, therefore, depend on heat in sterilizing such solutions.—ED.]